Remarks

Claims 1-61 are pending in the application. All claims stand rejected. By this paper, claims 1-8, 10, 11, 13-17, 20-27, 29, 30, 32, 33, 35, 36, 39-46, 48, 49, 51, 52, 54, 55, and 58-62 have been amended. New claims 63-65 has been added. Reconsideration of all pending claims herein is respectfully requested.

Claims 1-61 were rejected under 35 U.S.C. 103(a) as being unpatentable over Arnott and Miller et al. ("Miller"). This rejection is respectfully traversed.

<u>The cited references do not disclose or even suggest automatically ranking and arranging the locations of multiple video streams within a user interface.</u>

The claims have been amended merely to clarify the arguments presented herein, which are believed to be equally applicable to the claims as originally filed. As amended, claim 1 recites a method for *organizing* video streams on a display screen, comprising:

receiving a plurality of video streams at a network terminal;

simultaneously displaying the video streams in a user interface provided by the network terminal;

ranking *within the network terminal* at least a portion of the video streams according to a set of ranking criteria, wherein said ranking is to determine the relative *locations* of the video streams within the user interface; and

automatically arranging the *locations* of the simultaneously-displayed video streams within the user interface in order of rank as determined by the ranking criteria.

These claimed features relate to how multiple video streams are displayed and organized within a user interface. Certain video streams may be more important to a user due to a number of factors, including the time of day, the day of the week, how

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many people are watching the video streams, how frequently/recently a scene change has been detected, etc. Accordingly, the user may wish to see these more important video streams visually emphasized or placed in locations of prominence within the user interface.

The claimed invention ranks the video streams according to one or more of the above factors and arranges the *locations* of the video streams in the user interface in order of rank. For example, if the video streams are arranged from left to right, the leftmost video stream might be designated as having the highest rank, while other video are arranged from left to right in decreasing rank.

Thus, the claimed invention is about the *organization* or *layout* of multiple, simultaneously-displayed video streams a user interface. It has nothing to do with how video streams are transmitted or stored. It has nothing to do with bandwidth allocations. It has nothing to do with caching.

The Office Action admits that Arnott does not disclose ranking video streams and arranging at least a portion of the displayed video streams in order of rank. See Office Action at page 2. However, contrary to the Examiner's assertions, the addition of Miller does not cure the deficiencies of Arnott.

Miller could not be more different from the claimed invention. It is completely inapposite to the applicants' problem of organizing multiple video streams on a display screen. Indeed, Miller is completely and totally silent about how the locations of video streams within a user interface may be organized or arranged.

While Miller refers to the "priority" of video streams, which the examiner apparently equates with the claimed "ranking," Miller's priority is nothing more than a

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bandwidth priority for caching purposes. Miller has nothing to do with the .

arrangement of the locations of video streams within a user interface. For example,

Miller states that

> [a]s an individual video stream serving an end user from local center video cache 108 begins to reach the low end of its designated fill level, that stream is assigned a higher bandwidth priority when compared to caches for other video streams that are fuller. That priority is maintained until the cache supporting that individual stream is refilled to its threshold level.

Miller at [0017] (emphasis added). The applicants respectfully question what

relevance a "bandwidth priority" for video being cached in a local server could have to

the arrangement of simultaneously-displayed video streams within a user interface.

The Office Action refers several times to Miller's "stream manager." However,

according to Miller, the "stream manager 113" merely "allocates available bandwidth

to individual video streams based on an algorithm that sends more content to the

local center video cache when there is available bandwidth and less when the

transmission path 112 is nearing its overall capacity." Page 2, paragraph 16

(emphasis added). Miller does not disclose or even hint or suggest at the possibility

that the stream manager 113 may be used for arranging the locations of video

streams displayed within a user interface.

In response to the foregoing argument, which the applicants previously made

on February 23, 2005, the Examiner now points to the following discussion in Miller:

> The transmission between the centralized facility and the local center in [sic, is] controlled by a stream manager capable, based upon various criteria, of prioritizing the transmission of different video streams both live and previously stored, determining whether certain video data should be stored at the local center [cache], distributing the total volume of video data over multiple networks.

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Miller at [0006] (emphasis added). However, this merely reinforces the applicants' argument. As the underlined passages show, the stream manager merely prioritizes transmission of video streams from the centralized facility (a location where video is archived – see FIG. 1) to the local center (video cache). The stream manager does not affect how video streams are organized within a user interface of a receiving network terminal. Indeed, whether the user receives cached video or non-cached video is irrelevant to the claimed invention.

While the applicants believe that the previous claim language distinguishes Arnott/Miller, to advance prosecution of the application, the applicants have further amended the claims so that there can be no conceivable question as to the applicants' intent.

For example, claim 1, as currently amended, recites a method for *organizing video streams on a display screen.* Miller, on the other hand, has nothing to do with organizing video streams on a display screen. Even if Miller could display multiple video streams, he is completely silent about how those video streams should be organized, arranged, or displayed within the user interface.

Amended claim 1 also recites ranking the video streams *within the network terminal.* According to Miller, however, the stream manager controls "transmission between the centralized facility and the local center ... based upon various criteria." Page 1, [0006]. The stream manager sits between the centralized facility (video archive) and the local center (video cache). Contrary to the claimed invention, Miller's stream manager does not operate "within the network terminal."

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Claim 1 further recites that *said ranking is to determine the relative locations of the video streams within the user interface*. Miller does not rank video streams to determine the relative locations of the video streams within the user interface. Instead, he prioritizes video streams and allocates bandwidth for transmitting the streams to a local video cache. Miller has absolutely nothing to do with arranging the *locations* of the simultaneously-displayed video streams within a user interface. Miller may decide how much bandwidth to allocate to various streams for caching purposes, but he does not teach or suggest how those streams should be arranged once they are received by the network terminal. This element is completely absent in the cited references.

To the extent that the Examiner is arguing that the user may select which video streams to display in Arnott/Miller, the applicants respectfully point out that selection of video streams is not at issue, it is the *arrangement/organization* of the *locations* of the various video streams that is being recited. Even if the user could select the locations for the video streams, this would not satisfy the requirement of *automatically* arranging the locations of the video streams *in order of rank as determined by the ranking criteria*. A user selection would imply *manual* arrangement, not automatic arrangement.

<u>None of the cited references disclose the recited methods for ranking video streams thereby affecting the arrangement of the video streams within a user interface.</u>

Clams 2-8 recite different approaches for ranking the video streams and thereby changing their arrangement in the user interface, *i.e.*, recency of scene changes (claim 2-3), frequency of scene changes (claim 4), popularity (claim 5), time

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of day (claim 6), day of the week (claim 7), etc. Miller may utilize some of the above factors for determining how much bandwidth to allocate in <u>caching</u> certain video streams, *i.e.*, storing the video streams in the video cache for subsequent retrieval. However, this has nothing whatever to do with determining how to arrange multiple video streams on a display screen according to some type of priority or rank when they are actually retrieved.

For example, amended claim 2 recites:

> detecting a scene change within a first video stream; and
>
> promoting the first video stream to a higher rank <u>thereby changing the location of the first video stream within the user interface</u>.

The Office Action points to the following discussion in Miller for these limitations:

> Because of the time sensitive nature of the live material and the need to keep these queues small throughout the network, the stream manager 215 assigns a higher priority to live streams when compared to the prerecorded streams in the previous example in order to assure that the caches supporting live material remain within their thresholds. Retransmission of lost or corrupted packets for live streams is assigned the highest priority by the stream manager 215.

Miller at [0023]. Miller is completely deficient, however, in at least two areas.

First, as noted above, Miller's "priority" relates to <u>caching/bandwidth</u> priority:

> As an individual video stream serving an end user from local center video cache 108 begins to reach the low end of its designated fill level, that stream is assigned a higher <u>bandwidth</u> priority when compared to caches for other video streams that are fuller. That priority is maintained until the <u>cache supporting that individual stream is refilled to its threshold level</u>.

Miller at [0017] (emphasis added). In other words, priority in Miller relates to keeping a cache supporting an individual stream at or near a designated level.

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Promoting a video stream to a higher rank in Miller does not change "the location of the first video stream within the user interface." Indeed, changing a priority in Miller does not affect what is being received by the user. Whether the user receives video directly from the central facility (archive) or from the video cache does not impact the arrangement of video streams within the user interface.

Second, Miller does not disclose or even suggest detecting "scene changes." Miller only refers to the "time sensitive nature of live material." The Examiner appears to be implying that live video will have more "scene changes" than prerecorded video and will therefore receive a higher priority. This is manifestly false. Contrast, for example, a live video camera pointed at a blank wall verses a DVD of an action movie like Terminator 2. The action movie will have far more "scene changes" than the "live" video feed. Whether video is live or prerecorded has no impact on whether a scene change will occur. Miller does not disclose promoting the rank of a stream based on a "scene change," e.g., when someone walks into the room being covered by a live webcam. The whole issue of live vs. pre-recorded is irrelevant to the claimed invention.

Claims 3 and 4 recite arranging the video streams in the user interface based on "recency" or "frequency" of scene changes, respectively. As explained above, Miller does not even change the location of a video steam within the user interface in response to a scene change, let alone "arrange" the video streams based on recency or frequency of scene changes. These elements are wholly absent in the cited references.

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Similarly, Miller does not disclose or even suggest promoting video streams

and *thereby change the location of the video streams* based on the *time of day*

or *day of the week*, as recited in claims 5 and 6, respectively. The portions of Miller

referenced by the Examiner (page 2, paragraphs 0022 and 0023), merely disclose

that the home caches must be kept relatively small, *e.g.*, 1-10 seconds, in order to

maintain the live characteristics of a broadcast. The applicant renews its inquiry to

the Examiner as to how the teaching of keeping a cache small suggests changing the

layout of video streams in a user interface based on the time of day or the day of the

week. The two concepts could not be more different.

Claim 8 recites that at least one video stream is promoted to a higher rank in

response to *information contained within a user's calendar thereby changing*

the location of the first video stream within the user interface. The Office Action

refers to paragraph [0027] of Miller, which is reproduced below as follows:

> If the decision is made to utilize local storage, the stream manager 311 is
> assigned the task of allocating network bandwidth on the transmission path
> 312. This task will normally be assigned a lower priority than the live and on
> demand pre-recorded content being transmitted over the transmission path
> 312 since it will not be as time sensitive. However, if bandwidth is available,
> the stream manager 311 will allocate additional bandwidth to the transmission
> of the video content designated for local archiving. If there is still available
> bandwidth after all of the content scheduled for local archiving has been
> delivered, the stream manager 311 will communicate with the content
> management software within the video server 305 and determine if additional
> content stored at the centralized location 306 would be a candidate for local
> archiving based on any one or a combination of the following parameters.

The applicants respectfully request that the Examiner explain how the foregoing

extract from Miller teaches or suggests ranking based on a "user's calendar." First,

the cited portion does not even mention a calendar. Second, the stream manager

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has nothing to do with the individual network terminals that ultimately receive video.

Therefore, the entire quoted passage is inapposite to the claimed invention.

<u>The cited references do not disclose or suggest recited ways of indicating higher rank
within the user interface.</u>

As amended, claim 10 recites that a video stream displayed near the top of the

user interface is designated as having a higher rank than a video stream displayed

near the bottom of the user interface.

The Office Action points to a discussion in Miller as follows to allegedly satisfy

this limitation:

> Utilization of the local center video cache 108 allows for the opportunity for the
> local center video server 103 to signal the video server 106 at the national
> center to retransmit data packets when they have been lost or corrupted
> during transmission. Upon retransmission, lost packets can be inserted into
> the video cache 108 in the correct sequence prior to transmitting the
> information to the home cache 109. Similarly, the video decoder located in the
> television 110 (or a set top box adjunct) or in the personal computer 111, will
> have an opportunity to signal the local center video server 103 for
> retransmission when a packet has been lost or corrupted during transmission
> from the local center to the home. Upon retransmission, lost packets can be
> inserted into the home cache 109 in the correct sequence prior to transmitting
> the information to the computer or television of the end user.

Miller at [0019].   This quoted passage does not mention a "user interface." It merely

says that a video decoder located in the television, STB, or PC can signal for a

retransmission of a lost packet.   A person of ordinary skill in the art knows that a

"user interface" is defined as:

> Abbreviated UI, the junction between a user and a computer program. An
> interface is a set of commands or menus through which a user communicates
> with a program. A command-driven interface is one in which you enter
> commands. A menu-driven interface is one in which you select command
> choices from various menus displayed on the screen.

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> The user interface is one of the most important parts of any program because it determines how easily you can make the program do what you want. A powerful program with a poorly designed user interface has little value. Graphical user interfaces (GUIs) that use windows, icons, and pop-up menus have become standard on personal computers.

See www.webopedia.com. Nothing in the quoted passage of Miller would fit into any conceivable definition of "user interface."

If Miller does refer to an element which the Examiner regards as a user interface, the applicants respectfully request that the Examiner explain how the terms "top," "bottom," "left," and "right," are taught as well. The cited references make absolutely no sense in the context of claims 9 and 10, which refer to specific locations within a user interface for displaying highly-ranked video streams.

The cited references do not disclose or suggest displaying video streams in the claimed grid or ticker formats.

Claim 9 recites that the video streams are arranged within the user interface in a grid format, while claim 12 recites that the video streams are arranged in a ticker format. With respect to both claims, the Office Action points to Miller at paragraph [0013] as follows:

> After the local video cache has received 3-10 seconds of video content, it signals the home cache 109 that it is ready to transmit the content and after receiving an acknowledgement from the home cache, begins to transmit the video content. After the home cache has received 3-10 seconds of video content, it begins to play the material to the end user through the viewer of choice, either a personal computer 110 or a television 111. The home cache 109 and the local center video cache 108 maintain a flow of communication about the status of the fill level of the local center video cache 108 and ensures that a sufficient rate of content is transmitted to the home cache 109 to continuously enable an uninterrupted video stream to the end user.

The applicants are at a loss to see how this paragraph teaches or suggests either a grid or ticker arrangement for the video streams within a user interface. Miller does

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not mention either word, "grid" or "ticker." Nor does Miller use any language reasonably synonymous with these terms. The applicants respectfully submit that these elements are completely absent in the cited references.

As amended, claim 13 further recites that the ticker format comprises a moving carousel of simultaneously-displayed video streams having a beginning position and an ending position, and wherein a video stream displayed near the beginning position is designated as having a higher rank than a video stream displayed near the ending position. In this case, the Office Action refers to Miller as follows:

> FIG. 3a illustrates the concept of proactively sending content from the centralized location 303 to the local centers 307 when there is a high probability that the content will be viewed by several or more of the end users served out of the local center. Source material 301 is produced and recorded 302 and transported to the centralized location 303 in a number of possible ways, including direct transmission, file transfer, physical delivery, etc., depending upon the preference of the content producer.

Miller at [0025]. Again, Miller recites nothing that could reasonably be interpreted to support the rejection. The term "ticker" is not used or suggested by Miller. The applicant illustrates a "ticker" embodiment in FIG. 9, which is described as follows:

> the displayed video streams 401a-401d move across the television 110 from right to left in a carousel fashion. For example, when the video stream 401d passes beyond the left-hand side of the television 110, it reappears on the right-hand side.

Specification at page 22. The Examiner has provided no alternative definition for "ticker," and has not sought to show how Miller satisfies any reasonable meaning of the term.

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<u>The cited references do not disclose or suggest visually emphasizing the video stream of highest rank within the user interface.</u>

As amended, claim 14 recites "<u>visually</u> emphasizing the video stream of highest rank <u>within the user interface</u>." An example of visual emphasis is presented in FIG. 8 of the present application, in which video stream 401a is enlarged relative to the other video streams (as recited in claim 15).

In response, the Examiner cites again to Miller at paragraph [0025], as reproduced above. However, nothing in the cited of Miller suggests any type of emphasis of a displayed video stream, let alone an enlargement of a video stream relative to the other displayed video streams. The applicants respectfully request that the Examiner explain how the cited passage satisfies the claimed limitations.

<u>The cited references do not disclose or suggest rearranging the video streams within the user interface to reflect a change in rank.</u>

Claim 62 recites the step of rearranging at least a portion of the simultaneously-displayed video streams <u>within the user interface</u> to reflect a change in rank associated with a first video stream. This step is illustrated in FIG. 7 of the present application, in which one video stream is promoted to the upper-left corner of the screen to indicate a change in rank. None of the cited references disclose or even suggest arranging multiple video streams by rank, let alone rearranging the video streams in response to a change in rank. Deciding which video streams to cache, as in Miller, is not remotely analogous to determining an on-screen arrangement or rearrangement of simultaneously-displayed video streams.

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<u>The cited references do not disclose or suggest ordering of simultaneously-displayed video streams within a user interface.</u>

New claim 64 recites ordering the video streams within the user interface from left to right in order of decreasing rank, whereas new claim 65 recites ordering the video streams within the user interface from top to bottom in order of decreasing rank. These limitations are not disclosed or even suggested by the cited references.

<u>Conclusion</u>

As argued above, none of the cited references disclose or suggest at least the following limitations of claim 1:

      1.   a method for *organizing* video streams on a display screen;

      2.   ranking *within the network terminal* at least a portion of the video streams according to a set of ranking criteria, *wherein said ranking is to determine the relative locations of the video streams within the user interface*; and

      3.   arranging *the locations of* at least a portion of the simultaneously-displayed video streams within the user interface in order of rank *as determined by the ranking criteria.*

"To establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art." MPEP § 2143.03. Because these limitations are not taught or suggested by either of the cited references, a prima facie case of obviousness has not been established.
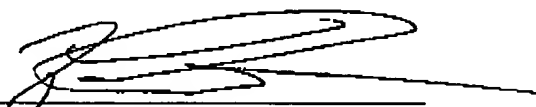
Accordingly, claim 1 is believed to be patentably distinct over the cited references. Claims 20, 39, 58, 59, 60, 61 either include or have been amended to

include similar limitations and are believed to be patentably distinct for at least the same reasons. All other claims depend directly or indirectly from one of the foregoing independent claims. For at least these reasons, all claims are believed to be in condition for allowance. A Notice of Allowance is respectfully requested.

Respectfully submitted,

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